

Earth Science and Applications from Space Strategic Roadmap Committee  
DRAFT 2<sup>nd</sup> Meeting Detailed Topics and Agenda

**Overall Meeting Purpose**

The goal is to end the meeting with agreement on the first three “essential roadmap elements” as described in Marc Allen’s presentation in January. They are:

- Broad science and exploration goals,\* priorities, recommended activities or investigations, and a summary of anticipated discoveries and achievements
- Suggested implementation approach and mission sets
- High-level milestones, options, and decision points

We want to start collecting the above consistent with the provisional roadmap outline as described in Marc Allen, including information for the appendices.

The results of this meeting will be summarized in a viewgraph presentation (due April 15) that will be provided to the National Research Council (and publicly released) as the draft report from this committee.

\* In the provisional outline, these are described in more detail as the Agency Objective Statement and Flow-down Objectives. To encourage consistent language, the following describes “science and exploration flow-down objectives” as the strategic roadmap objectives that are derived from the National goal and NASA objective

**First Day, March 16, 2005**

Goal is to end the first day with

1. Agreement on a relatively small set of “flow-down objectives” (science and exploration objectives that flow from National goal and NASA objective).
2. Agreement on a set of “stages.” One approach is to identify decadal stages (2005-2015, 2015-2025, and 2025-2035) corresponding to decadal reassessments of the directions for Earth-Sun system science and applications.
  - a. A good start on laying out (by stage or decade) specific investments and activities (investigations, missions, research and development programs, etc.) that are traceable to the flow-down objectives
  - b. The anticipated achievements and discoveries from these investments and activities (and the metrics you would use to measure success).
  - c. The beginnings of assessments of what might change (on a stage or decadal scale) both as a result of possible discoveries as well as external influences (e.g., policy emphasis on natural hazards, climate change, etc.) that lead to alternate pathways (i.e., sets of specific activities for that stage and possibly beyond).
3. Overnight assignments to individuals and subcommittees to refine the activities and pathways.

First Day Agenda Items:

Explorations, Continuous Awareness, and Maintaining Perspective Subcommittee reports that include (*italics trace back to roadmap essential elements*):

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- *Broad science and exploration goals and priorities.* Science and exploration objectives that flow from the National goal and NASA objective
- Stages and Pathways Framework
- *Broad science and exploration recommended activities or investigations.*  
Mapping of Flow-down Objectives to Missions or Activities  
Pathways/Options: Each committee is to lay out a developmental sequence of suggested NASA activities, noting the frontier issues, with encouragement for visionary thinking.
- *Suggested implementation approach and mission sets.* Tangible Missions, Something New, What is Frontier? Each group is to come up with tangible proposals, each one including at least one new idea, with an emphasis on what is frontier work
- *Summary of anticipated discoveries and achievements*
- Figures of Merit: Include the metrics and measures of success
- Preliminary ideas on *high-level milestones, options, and decision points*, if possible.

Full Committee Discussion of and Agreement on:

- Discussion of and agreement on a focused set of flow-down science and exploration objectives
- Presentation on status of the Mars Strategic Roadmap (this roadmap was started ahead of the other 12 strategic roadmaps as a “pathfinder”)
- Discussion of and agreement on a stages framework (decadal or other)
- Discussion of and preliminary agreement on key program high-level milestones, options, and decision points
- Preliminary definition NASA activities mapped to objectives/ stages/ pathway framework (subcommittees to work on overnight).
- Some ideas of what might change (on a stage or decadal scale) that lead to alternate pathways; sets of specific activities for that stage and possibly beyond (subcommittees to work on overnight).

Joint meeting with SRM #10 focused on topics and areas of common interest:

- Review of APIO plans for integration between strategic roadmaps and with the capability roadmaps
- Identification of joint interests with Sun-Solar System Connection Roadmap effort
- Guidance for further subcommittee work in area of joint interests with Sun-Solar System Connection Roadmap

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Proposed detailed agenda for Wednesday, March 16, 2005:

start	dur.	topic	lead
8:30 AM	0:10	Welcome (8:30 am)	Johnston, Figueroa
8:40 AM	0:10	Meeting Logistics	Alford, Johnston
8:50 AM	0:10	Co-Chairs' Remarks	Kennel, Figueroa, Evans
9:00 AM		Subcommittee Reports	
9:00 AM	0:20	- Maintaining Perspective	Hartman
9:20 AM	0:20	- Continual Awareness	Rotman
9:40 AM	0:20	- Explorations	Abdalati
10:00 AM	0:15	Break	
10:15 AM	1:45	Agreement on SRM #9 flow-down objectives	Members
12:00 PM		Joint Meeting with SRM #10	
12:00 PM	0:30	Working Lunch: Status of Mars Strategic Roadmap (roadmapping "pathfinder")	TBD
12:30 PM	0:30	Working Lunch: Status of Lunar Strategic Roadmap	TBD
1:00 PM	0:45	Plans for Integration of the Strategic Roadmaps (incl. NAC plans)	Valinia/ Kennel?
1:45 PM	0:15	Joint Subcommittee Report: 9/10 Shared Interests	Forbes
2:00 PM	0:45	Joint Discussion: Joint Interests with the Sun-Solar System Connection Roadmap effort	9 &10 Members
2:45 PM	0:15	Joint Discussion: Issues and guidance for 9/10 subcommittee	9 &10 Members
3:00 PM	0:30	Advanced Modeling, Simulation, and Analysis Capability Roadmap, "pathway-changing" innovations	Brooks
3:30 PM	0:15	Break - end of Joint Session	
3:45 PM	1:00	Discussion: Key Program Milestones, Options, and Decision Points	Members
4:45 PM	0:15	Overnight Assignments: NASA Activities Mapped to Objectives/ Stages/ Pathway Framework	Kennel, Figueroa, Evans
5:00 PM		Adjourn (5 pm)	Johnston

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**Second Day, March 17, 2005**

The goal is to end the meeting with agreement on:

1. Science and exploration objectives that flow from National goal and NASA objective (agreed to on first day)
2. Science and exploration priorities (agreed to on first day)
3. Recommended activities or investigations
4. Anticipated discoveries and achievements
5. Suggested implementation approach and mission sets
6. High-level milestones, options, and decision points

Second Day Agenda Items:

Presentations on topics that might modify the implementation approach

- Review presentations on Capability Roadmaps with emphasis on breakthrough (assumption or pathway-changing) technologies
- Presentation on “Legacy” Education Activity
- NRC Decadal Survey status

Subcommittee update on:

- Recommended Investigations, Missions, R&D Programs, etc., Mapped to the Objectives/Stages/Pathways Framework
  - Recommended activities or investigations
  - Anticipated discoveries and achievements
  - Suggested implementation approach and mission sets
- Summary of Key Program Milestones, Options, & Decision Points

Committee confirmation of flow-down science and exploration objectives and mapping to stages, pathways, investigations, missions, etc., in light of technology, education, and NRC plans. Committee agreement on:

- Recommended Investigations, Missions, R&D Programs, etc.,
  - Mapping to the flow-down science and exploration objectives
  - Mapping to the stages and pathways framework
- Summary of Key Program Milestones, Options, & Decision Points

Subcommittee assignments for development of draft roadmap document

Date, location, and purpose for third meeting:

- Date: Sometime in May 2005
- Location: TBD
- Purpose:
  - Developing the last two “essential roadmap elements:”
    - Key dependencies on and relationships to other Strategic Roadmaps
    - Identification of required capabilities, facilities, human capital, and infrastructure

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- Developing the DRAFT Roadmap Document (following provisional outline below):
  - Agency Objective Statement
  - Flow-down Objectives within a Stages and Pathways Framework
  - Recommended Investigations, Missions, R&D Programs, etc., Mapped to the Objectives/Stages/Pathways Framework
  - Summary of Key Program Milestones, Options, & Decision Points
  - Appendices:
    - National Policy Framework and External Constituencies
    - Required Capabilities Mapped to Stages/Pathways Decision Points
      - Technology
      - External Industrial and Academic Capacities
      - Agency Human Capital
      - Applicable Agency Infrastructure
      - Unique Requirements
    - Unique Education and Outreach Opportunities
    - Critical Inter-Roadmap Dependencies
    - External Partnerships
      - USG Agencies
      - International Partners
    - Bibliography of Key Agency Documents and NRC Documents

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Proposed detailed agenda for Thursday, March 17, 2005:

start	dur.	topic	lead
8:30 AM	0:10	Welcome (8:30 am)	Johnston, Figueroa
8:40 AM	0:10	Meeting Logistics	Johnston, Alford
8:50 AM	0:10	Co-Chairs' Remarks on Yesterday's Discussions	Kennel, Figueroa, Evans
9:00 AM	0:30	Status of "Legacy" Earth Science Education Roadmapping Activity	Johnson
9:30 AM		Capability Roadmap Presentations, innovations with "pathway-changing" potential	
9:30 AM	0:20	- Scientific Instruments and Sensors	Barney
9:50 AM	0:20	- Autonomous Systems and Robotics	TBD
10:10 AM	0:20	- Advanced Telescopes and Observatories	TBD
10:30 AM	0:30	Break	
11:00 AM	0:30	Update on NRC Decadal Survey	Gail?
11:30 AM	0:30	Update on Earth Sun System Strategic Planning	Birk?
12:00 PM		Working Lunch/Subcommittee Reports: Activities Mapped to Objectives/Stages/Pathway Framework	
12:00 PM	0:20	- Maintaining Perspective	Hartman
12:20 PM	0:20	- Continual Awareness	Rotman
12:40 PM	0:20	- Explorations	Abdalati
1:00 PM	1:30	Discussion: Recommended Investigations, Missions, R&D Programs, etc.	Members
2:30 PM		-- Mapping to the flow-down science and exploration objectives	
2:30 PM		-- Mapping to the stages and pathways framework	
2:30 PM	0:30	Break	
3:00 PM	1:00	Discussion: Summary of Key Program Milestones, Options, & Decision Points	Members
4:00 PM	0:30	General Discussion*	All
4:30 PM	0:30	Writing Assignments and Plans for Next Meeting	Kennel, Figueroa, Evans
5:00 PM		Adjourn (5 pm)	Johnston

\* NASA encourages the filing of written statements with the Advisory Committee. If time permits, and at the discretion of the Chair, the General Discussion may include time for brief statements from audience members.